ACC.11
60th Annual Scientific Session & Expo

E1160
JACC April 5, 2011
Volume 57, Issue 14

QUALITY OF CARE AND OUTCOMES ASSESSMENT

ASSOCIATION OF A POLYMORPHISM IN SLCO1B1 WITH STATIN-INDUCED MYALGIAS, MYOSITIS AND MYOPATHY: AN ELECTRONIC MEDICAL RECORD BASED PHARMACOGENETIC STUDY

ACC Oral Contributions
Ernest N. Morial Convention Center, Room 238
Tuesday, April 05, 2011, 11:45 a.m.-Noon

Session Title: Genetics and Cardiovascular Outcomes
Abstract Category: 48. Genetics and Clinical Outcomes
Presentation Number: 924-7

Authors: *Adnan A. Khan, Keyue Ding, Shameer Khader, Iftikhar J. Kullo, Mayo Clinic, Rochester, MN*

Background: Solute Carrier Organic anion transporter family member 1B1 (SLCO1B1) - an important pharmacogene, encodes a transmembrane receptor involved in hepatic drug transport. We investigated the association of genotypes (CC, CT and TT) at a non-synonymous SNP (rs4149056, minor allele frequency = 0.16) in SLCO1B1 with statin induced myalgias/myositis/myopathy by leveraging an electronic medical record (EMR)-based genome-wide association study (GWAS).

Methods: Of 3336 whites (63±9 y, 62% men) genotyped on the Illumina 660W platform for a GWAS of peripheral arterial disease, 87 patients had the CC genotype and 64 of these were on statins. We randomly chose an equal number of age and sex-matched individuals on statins from 877 CT and 2372 TT patients and reviewed the EMR of these patients for presence of statin-related adverse effects.

Results: Myalgia was defined as unexplained new muscle pain, tenderness or weakness, myositis as myalgias with elevated serum creatinine kinase (CK) (men >336 u/L, women >176 u/L), and myopathy as CK 10 times above the upper limits of normal. Statin related adverse events were present in 10 CC (15.6 %), 6 CT (9.3%) and 3 TT (4.6%) patients (P=0.07, Fisher's exact test).

Conclusions: Presence of the C allele at rs4149056 in SLCO1B1 is associated with increased risk of adverse reactions to statin therapy and knowledge of this allele may improve prediction of adverse reactions to such therapy. Our results highlight the potential clinical utility of EMR-based pharmacogenetic study.